REMARKS

Claims 1-3, 10-12, 22-33 and 37-48 are pending in the present application. None of the claims were amended in this response.

Applicant request an examiner interview to discuss the present claims, and to clarify the examiner's position regarding the cited documents. Applicant respectfully submits that the reasoning behind the multitude of combinations is not entirely clear. After a brief discussion with the examiner, it was agreed that the interview will take place on Thursday, May 24, 2007. Points that will be raised in the interview will be discussed below.

Claim 11 was rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite for failing to point out and distinctly claim the subject matter which Applicant regards as the invention. Applicant respectfully traverses this rejection. The term "said first commutative checksum" has support in the preamble of claim 11, where the term "a predetermined first commutative checksum" is recited. Withdrawal of the rejection is earnestly requested.

Claims 1-3, 10-12, 22-33, 37-48 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Kilner* (US Patent 5,649,089) in view of *Frezza et al.* (US Patent No. 4,982,430) and *McNamara* (US Patent 4,533,948). Applicants respectfully traverse this rejection. Favorable reconsideration is respectfully requested.

As argued previously, none of the cited art, alone or in combination teaches or suggests the feature of performing a commutative operation on segment checksums, wherein flow control for the data segments is negated by the commutative operation. Under the claimed configuration, by using the commutative operation for individual checksums of the data segments, flow control for the order of the individual data segments is no longer required.

In contrast, *Kilner* proposes a checksum process that necessarily relies on flow control of individual data segments (col.1 41-55; col. 2, lines 44-55; col. 3, lines 51-65), as each checksum is specifically directed to changes in specific places of a record database and affiliating an old checksum value from the cumulative checksum (see claim 1). Kilner discloses the real time tracking of changes to redundant databases, where a data communication system has an active controller 112 and a standby controller 115 (FIG. 1). The standby controller 115 assumes the role of the active controller in the event that the active controller experiences a failure within the

system. Kilner discloses that , in the case where the active controller becomes disabled, the standby controller must be capable of performing the functions of the active controller, and "in order to effectively and efficiently perform the function of the active controller, the standby controller <u>must be a substantially exact duplicate of the active controller, thus a redundant or standby database controller system must exist</u>" (col. 2, lines 19-25). Thus, to track modifications in the databases, Kilner relies on virtual checksums to affirm an active checksum with a standby checksum in a record database (col. 2, lines 35-55).

Applicant points out that the redundant databases requires the system in Kilner to perform <u>cumulative</u> checksums on the database (DB) with the (identical or "mirror image") standby DB to track changes and to set-up the reversible record checksum (col. 3, lines 52-65; see col. 4, lines 66-67). The present claims recite performing a <u>commutative</u> operation on segment checksums, which is not taught or suggested in Kilner. Each of the checksums (A_CRC, V_CRC and S_CRC) are disclosed as being cumulative checksums (col. 3, lines 52-65; see claim 1: all checksums are "cumulative").

Furthermore, the CRC's of Kilner are not disclosed as having any cryptographic characteristics. The entire disclosure of Kilner is concerned with preventing "lock out" and maintaining the integrity of a database associated with a standby controller when multiple changes are effected on the database record and corresponding backup (col. 1, lines 17-27, 41-54). Nothing in the disclosure of Kilner addresses cryptographic security. In the previous response, it was argued that Kilner "secures" the database by performing the CRC check with an XOR function on two identical databases (col. 4, .lines 66-67). Thus, an alteration to one of the databases would trigger a reset/resync in the system (col. 5, lines 3-7). The Office Action fails to explain how the record checksum (R_CRC, ref. 124) has any hashing or cryptographic characteristics.

Frezza and McNamara fail to solve the deficiencies of Kilner as well. *Frezza* deals with a configuration for securely downloading data from a remote site, where booter data for a CATV system is downloaded to a terminal to establish subscriber identity (col. 4, lines 18-36) The checksum is merely performed to <u>merely validate the user to establish a communication link</u> (col. 5, line 39 - col. 6, line 19). The disclosure in McNamara merely discloses a conventional DES encryption/decryption scheme which secures a connection over a data channel on a CATV

system (col. 7, lines 26-42; col. 8, lines 36-48). The Office Action does not explain how Frezza or McNamara could possibly be incorporated into the redundant database system of Kilner. The redundancy checksum of Kilner (R_CRC) merely bridges the "old" record with the "new" record checksum in a cumulative manner (but not commutatively) to resolve updated data records (col. 4, lines (col. 4, lines 27-54).

Applicant submits that there is no apparent reason to combine the references in the manner suggested in the Office Action. "[A] patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art." KSR Int'l Co. v. Teleflex Inc. 550 U.S. ___ (2007). The Office Action fails to provide a valid reason why a person of ordinary skill in the art would have combined the prior art elements in the manner claimed. The Office Action states that it would have been obvious to make the combination "to prevent an unauthorized modification of a transmitted message" (page 5, lines 5-7; page 6, paragraph 13, *et al.*). However, as explained above, Kilner does not appear to have anything to do with the external transmission of messages, but only appears to disclose a system for internally resolving updates to redundant databases. Kilner is not concerned with <u>who</u> is modifying the messages - the disclosure in Kilner only addresses whether or not the databases are consistent with their content (col. 2, lines 44-56).

In light of the above, Applicants respectfully submit that independent claims 1-3 and 10-12 of the present application, as well as claims 19-34 and 36-48 which respectively depend therefrom, are both novel and non-obvious over the art of record. Accordingly, Applicants respectfully request that a timely Notice of Allowance be issued in this case. If any additional fees are due in connection with this application as a whole, the Examiner is authorized to deduct said fees from Deposit Account No.: 02-1818. If such a deduction is made, please indicate the attorney docket number (0112740-466) on the account statement.

Respectfully submitted,

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